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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/189,637	11/10/1998	SHIROU SUZUKI	06257.0026	5700

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EXAMINER

LAO, LUN S

ART UNIT	PAPER NUMBER
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2643

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/189,637

Applicant(s)

SUZUKI, SHIROU

Examiner

Lun-See Lao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Introduction

1. This action is response to amendment filed on 11-16-2004. Claims 1-12 have been amended and claims 1-12 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1,3-8 and 10-12, are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida (US PAT. 5,253,299) in view of Anderson (US PAT. 5,315,660) and Kenney (US PAT. 6,009,129).

Consider claim 1, Ishida teaches that a noise reduction apparatus which reduces a noise level of noise contained in an input signal, comprising:

a detecting device which detects the noise level (see fig.5, (3c, (7-1...7-n))) of the noise from the input (see col.6 lines 9-37);

an adjusting device which for adjusts the level (see fig.5, (7-1...7n and 15-1...15n and 13-1...13-n)) of the on the basis of the first control signal (such as bank pass filters, 7-1...7n));

a reducing device (fig.5, (7-1...7n and 15-1...15n and 13-1...13-n))) which reduces a level of the adjusted input signal in accordance with a predetermined reducing

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characteristic and generates the reduced adjusted signal (col.6 lines 9-37), but Ishida does not clearly teach a gain controlling device which generates a first control signal and a second control signal on the basis of the detected noise level, the first control signal being used for adjusting a level of the input signal so as to make the detected noise level equal to a predetermined threshold level, and the second control signal being used for adjusting a level of a reduced adjusted signal so as to restore the level of the reduced adjusted signal to an original level of the input signal; and a restoring device which restores the level of said the reduced adjusted signal to the original level of the input signal on the basis of the second control signal.

However, Kenney teaches a gain controlling device (330) which generates a first control signal (for amplifier control, 303, 304) and a second control signal (315, 309) on the basis of the detected noise level (302), the first control signal being used for adjusting a level of the input signal (303, 304) so as to make the detected noise level equal to a predetermined threshold level, and the second control signal (to 315, 309) being used for adjusting a level of a reduced adjusted signal so as to restore the level of the reduced adjusted signal to an original level (such as receiving signal) of the input signal (col.7 line 53-col. 9 line 67);

Therefore, it would have obvious to one of ordinary skill in the art to utilize the teaching of Kenney into Ishida to provide an apparatus for controlling a filtering function for reduction of the IMD interference when narrow-band-caused intermodulation products are detected within the broadband.

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On the other hand, Anderson teaches a restoring device which restores the level of said the reduced adjusted signal to the original level of the input signal on the basis of the second control signal (see col.2 line 28-66).

Therefore, it would have obvious to one of ordinary skill in the art to utilize the teaching of Anderson into Ishida to provide quality audio signal.

As to claim 8, there is a method claim of claim 1 respectively. Thus note claim 1, respectively, for rejection.

Consider claim 3 Ishida teaches a sound existing part detecting device (see fig.2, (1,2)) which detects a sound existing part of the input signal; and a noise level detecting device which detects the noise level of the noise which is contained in the sound existing part (col.2 line 54-col.3 line 5).

Consider claim 4, Ishida's reference discloses that the noise reduction apparatus of the adjusting device comprises:

a determining device (see fig.5, (3c)) which determines whether or not the noise the level of the noise component is higher than the predetermined threshold level (see col.4 line 1 –col.5 line 15); and

a level adjusting device (see fig.5, 7-1...7n and 15-1...15n and 13-1...13-n) which adjusts the level of said input signal so as to make the noise level of said noise equal to said predetermined threshold level (see col.4 line 1-col.5 line 15); if said determining device (3c) determines that the noise level is higher than the predetermined threshold level (see col.4 line 1-col.5 line 15).

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Consider claim 5, Ishida teaches that the noise reduction apparatus of the reducing device comprises:

a dividing device (see fig.5, 7-1...7n) which divides the adjusted input signal into a plurality of divisional components whose frequency bands are different from each other;

a plurality of signal level detecting devices (3c), each of which detects a level of one of the divisional components (see fig.5, 7-1...7-n and col.3 lines 30-60);

a plurality of attenuating devices (see fig.5, 13-1...13n), each of which attenuates one of the divisional components on the basis of the detected level of the corresponding divisional component (see 5,7-1...7n); and

a mixing device (see fig.5, 10)) which mixes all of the attenuated divisional components (see fig.5 13-1...13n and col.3 lines 30-60).

Consider claims 6-7, Ishida discloses that the noise reduction apparatus of the adjusting device comprises an attenuator (see fig.5, 13-1...13n), and said restoring device (4, because it store the (L+R) for combining (L-R)) comprises an amplifier (4, because, when the signals (L+R) combining with (L-R) , it would become bigger) and apparatus of the amplifier amplifies the reduced adjusted signal by using an inverse number of an attenuation factor of said attenuator as an amplification factor (see fig. 5, 13-1...13n and col.3 lines 30-60).

As to claims 10-12, these are the method claims of claims 3-5, respectively. Thus note claims 3-5, respectively, for rejections.

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4. Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida (US PAT. 5,253,299) as modified by Anderson (US PAT. 5,315,660) and Kenney (US PAT. 6,009,129) as applied to claims 1 and 8 above, and further in view of Sakata (US PAT. 5,388,159).

Consider claim 2, Ishida, Kenney and Anderson, Ishida do not clearly teach that the noise reduction of the detecting device comprises:

an extracting device which extracts a high frequency component of the said input signal from the said input signal, a rectifying device Which rectifies the extracted high frequency component; an envelope signal generating device which generates an envelope signal of the said extracted high frequency component, and a level analyzing device which detects a lowest level of the said envelope signal.

However, Sakata teaches an extracting device(see 21, 62) which extracts a high frequency component of the said input signal from the said input signal, a rectifying device (62) which rectifies the extracted high frequency(61) component; an envelope signal generating device (62) which generates an envelope signal of the said extracted high frequency component (61), and a level analyzing device (65) which detects a lowest level of the said envelope signal (see col.9 line 22-col.11 line 49).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Sakata into the teaching of Ishida, Kenney and Anderson to provide an audio signal equalizing circuit by disposing a mode function capable of adding high frequency components in the audible frequency region, which are removed by a transmitting system at reproducing audio signal restricted in the

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band, and by making this mode function act at need so as to obtain rich reproduced sound.

As to claim 9, there is a method claim of claims 2 respectively. Thus note claim 2, respectively, for rejection.

Response to Arguments

5. Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

6. **Information Disclosure Statement**

The examiner does not receive a copy of the ^{Perm} ~~From~~ PTO-1449.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Aylward (US PAT. 4,467,287) is recited to show other related the noise reduction apparatus and noise reduction method.

9. Any response to this action should be mailed to:

Mail Stop ____ (explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Facsimile responses should be faxed to:
(703) 872-9306

Hand-delivered responses should be brought to:
Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao,Lun-See whose telephone number is (571) 272-7501. The examiner can normally be reached on Monday-Friday from 8:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz, can be reached on (571) 272-7499.


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (571) 272-2600.

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PRIMARY EXAMINER